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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,090	07/17/2003	Phillip G. Pitts	11515/020282	1077
7590 06/17/2004				
Richard S. Myers, Jr. Stites & Harbison PLLC 424 Church Street, Suite 1800 Nashville, TN 37219-2376		EXAMINER MANLOVE, SHALIE A		
		ART UNIT PAPER NUMBER 1755		

DATE MAILED: 06/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/622,090

Applicant(s)

PITTS ET AL.

Examiner

Shalie A. Manlove

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33 is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/20/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claim 20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 20 is improperly dependent upon claim 19 because it claims 10-45% opaque material, an amount greater than that claimed in claim 19.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 1, 10-17, 22, 30-31 is rejected under 35 U.S.C. 103(a) as being unpatentable over EPO 364281 in view of Heurtaux US 5,173,114.

EP'281 discloses an aerosol restorative composition comprising 10-30 wt % opaque material, 10-30 wt % wetting agent selected from anhydrous methyl, ethyl, or isopropyl alcohol and mixtures thereof, and 10-70 %wt of non-CFC propellant selected from isobutene, butane, and chlorodifluoromethane (abstract). The reference also teaches a method of applying the composition, which involves spraying the aerosol on the dental restorations, and heat-treating the dental prosthesis (col. 7, lines 40-col. 8, line 9) Please note the opaque material of EP '281 comprises glass frits and opacifying agents. EP '281 does not teach the compositional amounts of the opaque material as part of the aerosol composition. However, Heurtaux teaches opaque materials for dental restoration comprising 77-wt % glass frit and 23 wt % refractory or opaque particles. It would have been obvious to one of ordinary skill in the art to substitute Heurtaux's opaque/glass frit composition into EP '281 invention's in order to produce an opaque dental prosthesis that has the appearance of natural teeth.

The resulting composition comprises 7.7-23.1 wt % glass frit and 2.3-6.9 wt % opaque powders. A prima facie case of obviousness exists when the range of a claimed composition overlap the ranges disclosed in the prior art. In re Malagari 182 USPQ 549, 553, (CCPA 1974) and MPEP 2144.05

6. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0364281 in view of Panzera et al US 6,022,819.

EP'281 discloses an aerosol restorative composition comprising 10-30 wt % opaque material, 10-30 wt % wetting agent selected from anhydrous methyl, ethyl, or isopropyl alcohol and mixtures thereof, and 10-70 %wt of non-CFC propellant selected from isobutene, butane, and

chlorodifluoromethane (abstract). The reference also teaches a method of applying the composition, which involves spraying the aerosol on the dental restorations, and heat-treating the dental prosthesis (col. 7, lines 40-col. 8, line 9). Additionally, it is well known that the application process encompasses more than one firing, forming the tooth and filing or grinding in order to complete the structure of the tooth. Please note the opaque material of EP '281 comprises glass frits and opacifying agents. EP'281 does not teach compositional amounts of the opaque material as part of the aerosol composition. However, Panzera teaches 0 to 25-wt % opacifier and 75-to100-wt % glass frit. The resulting composition comprises 2.5-7.5-wt % of glass frit and 7.5-22.5 wt % opacifying materials. The percentages taught by Panzera would be considered obvious because it overlaps the claimed percentages. A prima facie case of obviousness exists when the range of a claimed composition overlap the ranges disclosed in the prior art. In re Malagari 182 USPQ 549, 553, (CCPA 1974) and MPEP 2144.05 Panzera also teaches the particle size of the porcelain to be less than about 8 and about 13.5 (col. 2, line 23) microns and the opacifier to be about 0.2 and 2.8 microns (col. 2, lines 57-58). The particle sizes of the composition would be important in determining the physical properties of the prosthesis. It would have obvious to one of ordinary skill in the art to disclose the particle sizes of the frit and the opacifier in order to selectively determine the physical attributes of the restoration.

It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference. In re Malagari, 182 USPQ 549, 553, (CCPA 1974) and MPEP 2144.05

Therefore, it would have been obvious to one of ordinary skill in the art to use Panzera's dental porcelain composition or any restoration composition into EP '281 invention's for use in the preparation of dental restorations.

7. Claims 1-2, 4-7, and 10-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0364281 in view of Thiel et al US 5,679,144

EP'281 discloses an aerosol restorative composition comprising 10-30 wt % opaque material, 10-30 wt % wetting agent selected from anhydrous methyl, ethyl, or isopropyl alcohol and mixtures thereof, and 10-70 %wt of non-CFC propellant selected from isobutene, butane, and chlorodifluoromethane (abstract). The reference also teaches a method of applying the composition, which involves spraying the aerosol on the dental restorations, and heat-treating the dental prosthesis (col. 7, lines 40-col. 8, line 9). Additionally, it is well known that the application process encompasses more than one firing, forming the tooth and filing or grinding in order to complete the structure of the tooth. Please note the opaque material of EP '281 comprises glass frits and opacifying agents. EP'281 does not teach compositional amounts of the opaque material as part of the aerosol composition. However, Thiel teaches 0.5 to 50wt % opacifier and 99.5-to50-wt % glass frit. The resulting composition comprises 1.5-29.8 wt % of glass frit and .05-15 wt % opacifying materials. The percentages taught by Thiel would be considered obvious because it overlaps the claimed percentages. A prima facie case of obviousness exists when the range of a claimed composition overlap the ranges disclosed in the prior art. In re Malagari 182 USPQ 549, 553, (CCPA 1974) and MPEP 2144.05

Thiel also teaches glass frit to have a maximum grain size of less than 20 microns (col. 2, lines 26-27) and the opacifiers to have a maximum grain size of less than 2 microns (col. 2, lines 33-35). The particle sizes of the composition would be important in determining the physical properties of the prosthesis. It would have obvious to one of ordinary skill in the art to disclose the particle sizes of the frit and the opacifier in order to selectively determine the physical attributes of the restoration. The particle sizes taught by Thiel would be considered obvious because it overlaps the claimed particle sizes. A prima facie case of obviousness exists when the range of a claimed composition overlap the ranges disclosed in the prior art. In re Malagari 182 USPQ 549, 553, (CCPA 1974) and MPEP 2144.05

8. Claims 1, 10-18, 22, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0364281 in view of Brodtkin et al US 6,428,614.

EP'281 discloses an aerosol restorative composition comprising 10-30 wt % opaque material, 10-30 wt % wetting agent selected from anhydrous methyl, ethyl, or isopropyl alcohol and mixtures thereof, and 10-70 %wt of non-CFC propellant selected from isobutene, butane, and chlorodifluoromethane (abstract). The reference also teaches a method of applying the composition, which involves spraying the aerosol on the dental restorations, and heat-treating the dental prosthesis (col. 7, lines 40-col. 8, line 9). Additionally, it is well known that the application process encompasses more than one firing, forming the tooth and filing or grinding in order to complete the structure of the tooth. Please note the opaque material of EP '281 comprises glass frits and opacifying agents. EP'281 does not teach compositional amounts of the opaque material as part of the aerosol composition. However, Brodtkin teaches 13 to 20wt %

opacifier and 80-to 87-wt % glass frit. The resulting composition comprises 8-26.1-wt % of glass frit and 1.3-6 wt % opacifying materials (Table 3). The percentages taught by Brodtkin would be considered obvious because it overlaps the claimed percentages. A prima facie case of obviousness exists when the range of a claimed composition overlap the ranges disclosed in the prior art. In re Malagari 182 USPQ 549, 553, (CCPA 1974) and MPEP 2144.05

### *Allowable Subject Matter*

9. Claim 33 is allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: The prior art of reference fails to teach the claimed method of preparing the dental restoration comprising firing the restoration to set the opaque coating, building a porcelain restoration body over the opaque coating to provide a porcelain restoration, grinding the porcelain restoration body to resemble a human tooth restoration and firing the ground porcelain restoration body to set the porcelain.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shalie A. Manlove whose telephone number is (571) 272-1372. The examiner can normally be reached on M-TH 6:30-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (571) 272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shalie A. Manlove  
Examiner  
Art Unit 1755

June 12, 2004

  
**C. MELISSA KOSLOW**  
**PRIMARY EXAMINER**